

# FURTHER NOTES ON AUSTRALIAN COLEOPTERA, WITH DESCRIPTIONS OF NEW SPECIES.

By the Rev. T. BLACKBURN, B.A.

## VI.

[Read October 1, 1889.]

The specimens on which the following notes and descriptions are founded have been recently acquired or determined by me. They are inhabitants of the colony of South Australia, with one exception—a *Novius* from N. S. Wales. As I had the honour of reading a paper last October before this Society on the Australian *Coccinellidæ* (including some new species of *Novius*), it seems convenient to describe the present one here, although isolated from the other species to which this paper relates by its place in the catalogue of *Coleoptera* as well as by its habitat.

### CARABIDÆ.

#### ACROGENYS.

*A. australis*, sp. nov. Angusta ; elongata ; sat depressa ; crebre (capite minus crebre) sat fortiter punctulata ; supra pilis brevibus dense vestita ; prothorace canaliculato, quam latiori paullo longiori ; elytris postice truncatis, striatis, interstitiis sat planis. Long.,  $2\frac{3}{5}$  l. ; lat.,  $\frac{4}{5}$  l.

The antennæ are about half as long as the whole insect, and are very robust ; all the joints are pubescent, the basal one scarcely half as long as the head, the rest all much shorter, the second shortest. The maxillary palpi are large and stout, with the apical joint elongate-triangular, the labial very small and slender with the apical joint cylindric. On the head an impression runs obliquely forward from either eye ; these two impressions are connected by a transverse one in front, and are foveately deepened near their junction with it ; from some points of view these deepened portions alone are noticeable, so that the head seems only bifoveate in front. The prothorax scarcely differs from that of *A. hirsuta*, Macl., except in being less strongly rounded in the front part of its sides, so that it is a little narrower in proportion to its length. The apex of the elytra is rotundate-truncate ; none of their interstices are carinate. The puncturation of every part is a little less close and less coarse than in *A. hirsuta*.

Though so very much smaller than either of the previously described species of *Acrogenys*, I cannot doubt that this is a

member of the genus. Having only a single example I have not been able to dissect the parts of the head, and in so small an insect it is most difficult to see them clearly without dissection, but as far as I can see they are quite as in *A. hirsuta*. The only structural differences that I observe consist in the more abrupt truncation of the apex of the elytra and the greater bluntness, as far as I can observe it, of the median tooth of the mentum.

Adelaide district; in flood refuse of the Torrens.

#### DIABATICUS.

The following two species appear to belong to this genus, although its diagnosis (Cist. Ent. II., p. 324) is not very clear, unless one happened to possess a type of the American genus *Pinacodera*, with which it is compared, and unfortunately I have not such type, nor do I know of one in any Australian collection. Moreover, the expression "orbitu post-oculari rotundato-angustato" is obscure, and the sparseness of puncturation on the elytra can hardly be regarded as a generic character. The species before me seem however to be congeneric with *Plochionus australis*, Er., for which the genus was formed, and agree fairly with Bates' diagnosis as far as I can follow it, although I should scarcely call the claws "strongly" denticulated. The genus resembles *Phlaocarabus*, but differs *inter alia* in the shorter and stouter tarsi, smaller eyes, and elytra very much shorter in proportion to the head and prothorax.

[While this memoir has been in the printer's hands I have received from Mr. T. G. Sloane, of Sydney, some remarks on the generic affinities of these and other *Lebiides* on which I had asked his opinion. Mr. Sloane occupies a foremost place among the rising entomologists of Australia, and his residence in Sydney gives him the opportunity of consulting the oldest and best Australian collections; hence, I attribute considerable importance to his determinations. While disclaiming the ability to speak as a specialist on the *Lebiides*, he is disinclined to refer the following two species to *Diabaticus*, but is unable to refer them to any other described genus. As will be seen from my remarks (above) I think it quite possible that Mr. Sloane is right in this matter, but, nevertheless, it seems to me advisable to use the name *Diabaticus* for the present, rather than form a new genus closely allied to *Diabaticus*, especially as I can specify no good structural distinctive character. I think I have described the species under consideration sufficiently in detail to prevent any actual inconvenience arising from my having attributed them to a genus in which they can perhaps hardly maintain a permanent place.

I should add that Mr. Sloane tells me he cannot regard as genuinely pertaining to *Phlaocarabus* the South Australian spe-

cies that I have attributed to that genus, mentioning especially as distinctive of *Phlaeocarabus* a much smaller second joint of the antennæ and a more *Xanthophaea*-like head. As Mr. Sloane has seen the insect on which the genus was founded I have no doubt he is right in the matter, but, nevertheless (as I pointed out in a paper read last week before the Linnean Society of N. S. Wales) these South Australian species agree very well with the published characters of *Phlaeocarabus*, so that they can hardly be furnished with a new generic name except after a re-characterising of *Phlaeocarabus*. Mr. Sloane's courtesy in making these comparisons however enables me to perceive the need of pointing out that my allusion to *Phlaeocarabus* above refers to the South Australian species which I have attributed to that genus, and might possibly not apply to the original type.]

*D. tumidiceps*, sp. nov. Elongatus, capite prothoraceque conjunctis elytris vix brevioribus; glaber; sat nitidus; obscure rufescens, elytris piceo-umbratis, antennis, palpis, pedibus, meso- et metasternis abdomineque, testaceis, hoc ad latera piceo-maculato; capite pone oculos fortiter dilatato; hoc prothoraceque sparsim subtiliter punctulatis et subtiliter transversim rugatis; elytris sat fortiter striatis, interstitiis vix convexis minus sparsim punctulatis, postice rotundato-truncatis. Long.  $3\frac{1}{2}$  l.; lat. 1 l.

Antennæ less than half as long as the whole insect, moderately robust, the second joint shorter than the rest, which are subequal. The head is subparallel, and scarcely narrower than the prothorax, and is longer (from the base to the apex of the labrum) than it is wide, being as wide across the post ocular dilatation as across the eyes; there is a deep impression on either side at the inner front corner of the post ocular dilatation from which a furrow runs forward just within the eye, and curves forward across the head between the antennæ, in front of which the surface of the head is uneven. The prothorax is fully as long as wide, subtruncate in front, with the dorsal channel strong but abbreviated at both ends, the anterior angles quite rounded off, the sides very finely margined, roundly divergent hindward immediately behind the base and then gently convergent and almost straight to the base, which is narrower than the widest part of the segment by about a third part of the width of the latter; the hind angles are subdentiform, with the adjacent surface a little explanate; the anterior curved impression is very strong, the base rather strongly lobed in the middle. The elytra are widest behind the middle, where they are nearly twice as wide as the widest part of the prothorax; there are two large punctures on the third interstice. The mentum is strongly toothed;

the apical joint of the labial palpi is moderately securiform in the male, that of the maxillary being elongate, subcylindric, and truncate at the apex; the tarsi are moderately broad, glabrous, and nitid above, the joints of almost equal width, the fourth somewhat emarginate at the apex.

Port Lincoln; among débris on swampy ground, not common.

*D. minor*, sp. nov. Sat elongatus; capite prothoraceque conjunctis elytris parum brevioribus; glaber; sat nitidus; rufescens vel testaceo-rufus; capite, elytrorum umbris nonnullis, et sternorum abdominisque maculis nonnullis, piceis vel rufo-piceis; capite obsolete sat sparsim punctulato, pone oculos sat fortiter dilatato; prothorace sat fortiter transversim rugato; elytris subtiliter striatis, interstitiis sat planis, obsolete sparsim punctulatis, postice truncatis. Long.,  $2\frac{3}{5}$  l.; lat.,  $\frac{4}{5}$  l. (vix).

Head oval, a little narrower than the prothorax, scarcely so long as wide, and a little wider across the eyes than across the dilated part behind them. There is an obscure impression on either side between the antennæ. Prothorax nearly half again as wide as long, subtruncate in front; the dorsal channel fine, lightly impressed, and abbreviated at both ends; the anterior angles quite rounded off; the sides narrowly margined, moderately rounded and scarcely sinuate behind, but with the hind angles minutely subdentiform, the widest part about half again as wide as the base, which is moderately lobed in the middle, the anterior impression moderately defined. The elytra are about one-fifth again as long as the head and prothorax together, and about one-third again as wide as the prothorax, the widest part being near the apex. The puncturation of their interstices is much feebler than in *D. tumidiceps*.

Port Lincoln, in company with the preceding.

#### PHORTICOSOMUS.

*P. robustus*, sp. nov. Piceo-brunneus; antennis palpisque manifeste, pedibus vix, dilutioribus; antice leviter bisinuato, postice quam antice vix latiori, angulis posticis acutis subdentiformibus; elytris postice adlatera sinuatis, fortiter striatis, interstitiis sat convexis. Long., 7 l.; lat.,  $2\frac{1}{3}$  l.

Head (across the eyes) slightly narrower than the base of the prothorax; the latter half again as wide as its length down the middle, at its widest in front of the middle; the front margin and base of almost equal width, the front margin moderately concave and gently bisinuate; the front angles much rounded, and not at all produced forward as they are in *P. mucronatus*, Blackb.; the central channel moderately impressed, and at both ends much

abbreviated; the sides strongly sinuated immediately before the hind angles, which are scarcely less dentiform than those of *P. mucronatus*; the reflexed margin narrow, as in *P. brunneus* (narrower than in *mucronatus*); the surface transversely depressed in front of the disc, as in *brunneus*, Blackb., and with a curved anterior impression, also as in *brunneus*. The sculpture of the elytra is very similar to that of *P. brunneus* and *felix*, Schaum., except that the interstices are more convex.

The already-described species of *Phorticosomus*, neither very much larger nor very much smaller than this, and having the posterior angles of the prothorax sharply rectangular or subdentiform, are *similis*, Blackb. (this is a good deal smaller) and *mucronatus*. Both these have the elytral striæ very much feebler and the interstices flat. *P. mucronatus* also has the clypeus much less rugose, and the sides of the elytra very much more strongly sinuate near the apex.

South Australia; I am uncertain of the exact locality.

#### PSELAPHIDÆ.

##### CTENISTES.

*C. Adelaide*, sp. nov. Rufescens; antennis elongatis; prothorace antice angustato, postice fovea magna impresso; elytris prothorace dimidio longioribus; oculis sat magnis.

Maris (?) metasterno profunde longitudinaliter sulcato; antennis elytrorum apicem attingentibus, articulis 1-7 conjunctis quam articuli 8-11 conjuncti multo brevioribus, articulis 8-10 gradatim brevioribus, articulo 11° quam 9<sup>us</sup>. et 10<sup>us</sup>. conjuncti vix breviori, apice oblique truncato. Long,  $\frac{2}{3}$  l.

This species is, no doubt, rather close to *C. parvus*, Shp., which it resembles in the long antennæ (reaching the apex of the elytra when set back), the well defined simple fovea of the prothorax and the elytra about half again as long as the prothorax. The antennal joints, however, are very different in their proportions *inter se*; the 10th joint being much longer than wide, and the 11th barely equal (not to the preceding three together but) to the preceding two. These antennal differences might be sexual, but they are accompanied with certain other distinctions, the eyes in the present species being by no means exceptionally small, and the elytra being rather strongly dilated behind—which seem quite inconsistent with specific identity. From *C. impressus*, Shp., the present species may be known *inter alia* by the prothorax being as long as wide, and scarcely narrower at the base than in the middle, and having a simple fovea, from *C. simplex*, Shp., by its long antennæ and non-transverse prothorax, from *C. vernalis*, King, and *C. Kreusleri*, King, by the very different antennal structure, although it is possibly the previously undes-



cribed sex of the latter (as the size and the antennal structure of the one sex are really the only distinctive characters mentioned in the description of that species), the size of which, however—said to be less than half a line—seems to point to distinctness, and moreover I have another species (mentioned below) which agrees much better with the description.

In flood débris near Adelaide.

*C. Kreusleri*, King. In flood débris of the Torrens I have taken both sexes of a *Ctenistes*, which I believe to be this species. The distinction between the sexes seems very slight except in respect of the antennæ. The sex that I take to be the male has the apical four joints of the antennæ together equal to the basal seven together, and forming a distinct club in which joints eight-ten are somewhat equal in length, and gradually increase in width, joint eleven being wider still, slightly longer than nine and ten together, and obtusely narrowed at the apex; the second ventral segment is scarcely longer than the following segments together, and bears an obscure impression slightly in front of its apical margin. In the other sex the apical four joints together of the antennæ are considerably shorter than the basal seven together, and are successively thickened, joint 8 being same length as 9, 10 scarcely shorter than the preceding two together, 11 scarcely shorter than the preceding three together; and the second ventral segment is decidedly longer than the following segments together and has no impression. The whole insect is of a very uniform pale castaneous colour, it is closely and rather coarsely asperate-punctulate, and somewhat closely clothed with short, crisp, whitish hairs. The prothoracic fovea appears somewhat forked in front. The antennæ are short (reaching back to about the middle of the elytra), and the eyes are much smaller than in *C. Adelaidæ*.

*C. tenebricosus*, sp. nov. (?female). ♀ Brunneo-niger; antennis sat brevibus; prothorace antice angustato, postice fovea magna impresso; elytris prothorace dimidio longioribus; oculis sat parvis. Long.,  $\frac{2}{3}$  l. (vix).

This species differs from all yet described as Australian of the genus, by its uniform blackish colour. It is more finely and sparsely punctured than *C. Kreusleri* (?), and therefore more nitid; like that species it is clothed with short, crisp, whitish hairs. The prothorax is scarcely so long as wide, with a deep posterior fovea not at all forked in front, the general surface of the segment being even. The elytra are considerably narrower at the shoulders than behind. The antennæ scarcely differ in structure from those of the specimen which I regard as the female of *C. Kreusleri*.

Port Lincoln; in moss,

## ARTICERUS.

*A. asper*, sp. nov. Ferrugineus, antennis pedibusque testaceis, supra (abdominis basi nitida sparsim punctulata transversim profunde excavata excepta) subopacus, crebre aspere punctulatus; capite prothorace elytrisque obscure pubescentibus; antennis valde depressis, quam latiores parum longioribus, supra parte dimidia basali longitudinaliter impressa; capite quam antennæ vix longiori; prothorace fortiter transverso haud foveolato. Long., 1.l. (vix).

The antennæ are not much longer than wide on their flattened face, both sides of which are strongly rounded in outline, but the middle of the curve is on the outer side, a little nearer to the apex than on the inner side.

Of the other described species having antennæ impressed above, *Pascoeus*, Shp., has the prothorax not transverse; *aurefluvius*, Schauf., has the inner margin of the antennæ straight, and *breripes*, Shp., has the elytra punctured only indistinctly.

A single specimen was taken by me in flood refuse near Adelaide.

## BYRRHIDÆ.

## BYRRHIUS.

I see no good structural character to prevent the following species being considered a true *Byrrhus*, although it should be noted that I have not been able to devote a specimen to dissection. It differs from the typical forms of the genus in having the body somewhat densely and evenly bristling with long erect hairs, and having the incrassation of the antennæ commencing only at the seventh joint. These latter consist of 11 joints, and are inserted, as in *Byrrhus*; the head is retracted in repose, but in such fashion that the eyes and labrum are visible (the former only in part); all the tarsi are laid stiffly back in repose against their tibiæ, which, however, are channelled by no means deeply for their reception. The apical joint of the maxillary palpi is somewhat more elongate and conic than in most species of *Byrrhus*.

*B. Torrensensis*, sp. nov. Oblongo-ovatus; nitidus; crebrius subtilius punctulatus; pilis longis nigris erectis sat dense vestitus; supra nigro-æneus, prothorace obscure viridi; subtus rufus vel piceo-rufus, antennis (clava picea excepta), palpis, labro, pedibusque, testaceis. Long.,  $1-1\frac{3}{5}$  l.; lat.,  $\frac{3}{5}-1$  l.

The antennæ, if set back, would about reach the base of the prothorax; joint 1 is stout, and about as long as 3, 2 is very short, 3 nearly as long as 4, 5, and 6 together, the latter three subequal, and scarcely longer than wide, 7-11 forming a well-defined club.

Two specimens occurred to me in flood-refuse on the banks of the River Torrens.

# ELATERIDÆ.

## TETRALOBUS.

*T. Fortnumi*, Hope. I have lately received a male example of this genus taken by Mr. Read near Lake Eyre, which seems to be quite distinct from any species previously seen by me. It is broad in proportion to its length (long., 13 l. ; lat., 4 l.), and its prothorax, instead of being more or less canaliculate down the middle, has a very faintly *raised* shining dorsal line. But the character on which I rely for specific distinctness consists in the structure of the antennæ in the male, the branches of which are much shorter than in any other *Tetralobus* I have seen, the longest of them being no longer than the distance between the antennæ at their base. The antennæ, moreover, are very short as a whole, reaching when laid back not further than to the front of the basal quarter of the prothorax. The colour of the insect is dark chestnut, the legs and antennæ (except the basal joint) being paler. The prothorax is (across the hind angles) exactly as wide as it is long down the middle. The elytra are very distinctly punctulate-striate, but the puncturation becomes feebler, and the striæ are obsolete near the apex. The interstices are feebly convex in the front half, and are punctured more sparingly than in any other *Tetralobus* that I have seen. The prothorax has the usual fovea on either side of the middle line near the front strongly marked.

As there are several descriptions of species of *Tetralobus* which scarcely mention more than generic characters it is very likely that this insect has already received a name, and it appears to me not at all unlikely to be *T. Fortnumi*, Hope. The only difficulties in so regarding it are that *T. Fortnumi* should be a somewhat *narrower* insect, and is said to have the longitudinal line of the prothorax "parum impressa ;" whereas in the specimen before me it is "haud impressa." This latter character, however, is probably variable (judging from other species of *Tetralobus*), and as it seems that *T. Fortnumi* is quite incapable of certain identification, and the measurements given by its author may be a trifle inexact, I think it will be well to assign the name to this insect, at any rate until some fresh evidence to the contrary may be forthcoming.

*T. Manglesi*, Hope. There are before me specimens of an insect belonging to my own collection and to those of the Adelaide Museum and of the Adelaide University Museum, taken in various parts of South Australia, which, I think, may be regarded as this species. Like most of its congeners, the species varies greatly in size, the smallest examples being long., 12 l., lat., 3½ l. ; the largest long., 17 l., lat., 5 l. It is accordingly one of the widest of the genus in



proportion to its length. It is also characterised by the elytra being (not gradually narrowed from the base to the apex, but) slightly narrowed immediately behind the base, and then lightly dilated again, so that they are very slightly wider just before the apex than at any other part. The prothorax is just barely wider across the hind angles than its length down the middle, and immediately in front of the middle it is in both sexes almost or quite as wide as across the hind angles, which are only very slightly produced hindward or outward, the sides being gently sinuate. It is very closely and quite rugulose punctulate in front, less so behind. Its dorsal channel is extremely feeble in the examples before me, and the lateral foveæ are only slightly marked. The front angles are more or less feeble and rounded. The elytra are distinctly striate, the striæ irregularly punctulate, the external ones having stronger and larger punctures than those near the suture, all the striæ and their punctures becoming more or less obsolete towards the apex. Each apex is separately and feebly rounded, the suture ending in a very small spine. The interstices are more or less closely punctured, more strongly in the male than the female. The sides of the prosternum are very strongly and sparingly punctured—(this is a highly distinctive character, and does not seem to vary). The antennæ of the male are shorter than in the large common South Australian species (*T. Australasica*, or possibly *Murrayi* if the two are really distinct), and the individual branches of the same are also shorter, though they are very distinctly longer than the distance between the bases of the antennæ. The tarsi also are notably shorter, especially in the male.

From *T. Fortnumi* (vide "supra") it differs chiefly in being much less attenuate behind, with the prothorax less rugulose dorsally; the sides of the prosternum much less closely punctulate; the branches of the antennæ in the male considerably longer, and the apical spines of the elytra much feebler.

#### TENEBRIONIDÆ.

##### LEPISPILUS.

*L. rotundicollis*, sp. nov. Oblongus; convexus; piceus; maculatum flavo-pubescentis; prothoracis lateribus sinuatis, latitudine paulo ante medium quam trans basin haud minore. Long., 8 l.; lat., 3  $\frac{3}{5}$  l.

Differs from *L. sulvicollis*, Boisd., in the form of the prothorax, which is (by measurement) very nearly twice as wide as long (as 13 to 7 in the example before me), with the front about two-thirds the width of the base, the sides strongly convex in outline immediately behind the front, and from the middle to the base almost as strongly concave, so that the greatest divergence is at

the base and at a point a little in front of the middle. The closely punctulate depressions on the elytra bearing yellow pubescence are very shallow and very large, and are very irregularly placed, so that the nitid interspaces form an ill-defined and extremely open network, none of them appearing as continuous longitudinal costæ, even that nearest to the suture being more or less interrupted. It is not improbable, however, that there may be some variation in this respect if in some examples the depressed spaces happen to fall more into longitudinal lines. The average area of these closely punctured depressed spaces is about equal to that of the eye as seen from above, but in places two or three of them almost coalesce, so as to form what on a casual glance looks like a very large space indeed.

A single example in the South Australian Museum is ticketed "C. A." (Central Australia). Other specimens similarly ticketed seem to be from the southern part of the tropical region.

## MELOIDÆ.

### ZONITIS.

*Z. nigro-enea*, Fairm., var. (?) *A.* Nigra; clypeo antice obscure piceo; elytris cœruleis, crassissime rugulose punctulatis, interstitiis haud lævigatis. Long., 6 l.; lat.,  $1\frac{1}{5}$  l.

The antennæ are two-thirds the length of the body; joint 1 is slightly longer than 4, 2 scarcely half as long as 1, and two-thirds the length of 3. The head is equal in length to the prothorax, and also to the first four joints taken together of the antennæ; the distance from eye to eye is rather more than the length of the basal joint of the antennæ, or about one-third the length of the head. The labrum is nearly as long as the basal joint of the antennæ, ciliated in front and deeply channelled down the middle, its surface shiny, with a few strong punctures. The clypeus is truncate in front, its hind suture strongly angulated; its surface is shining and only obscurely punctulate, a deep furrow crossing it near its base, its length about equal to that of the labrum. The hind part of the head is strongly and somewhat rugosely punctulate, and almost truncate behind. The prothorax down the middle is barely longer than its greatest width, which is slightly behind the middle; its base is about a quarter again as wide as the base of the head; the width of its front is about one-third of its base, from which the sides diverge sinuously not quite to the middle, where they are strongly rounded, and thence converge sinuously to the front; the front part of the surface is a little depressed; from this depressed space a very strong central channel runs back to the base, and on either side of the channel there is a large deep fovea on the disc. The scutellum is nitid, and very sparsely, but not finely, punctulate. The elytra are

extremely coarsely foveolate-punctulate, the interstices quite confused, with no tendency to a linear arrangement, and bearing confused punctures and wrinkles. In the male the basal three ventral segments are carinate down the middle, and the fourth is strongly and widely emarginate at the apex. The underside is rather closely (least closely on the hind body), squamosely, and finely punctured, and is densely clothed with black pubescence, the upper surface being glabrous.

Seems to be near *Z. nigro-anea*, Fairm., but is larger, with the hind body of the male carinate (not "longitudinally impressed"), and with the scutellum and the elytral interstices punctulate.

If M. Fairemaire's description of *Z. nigro-anea* can be relied upon, the insect described above is probably a distinct species. But unfortunately that author's "Revision des Zonitis d'Australie" contains errors (perhaps of the printer) which render it unsafe to give new names to species that seem closely allied to those that are described in it. In the description of *Z. indigacea* (e.g.) we read of the antennæ "articulo 2<sup>o</sup> tertio paulo longiore," but further on *indigacea* is distinguished from *nigro-anea* by "the second joint notably shorter than the third."

Port Lincoln.

*Z. Andersoni*, sp. nov. ♀ Nigra, capite (labro excepto) rufo, elytris (apice excepta) testaceis, prothorace pedibusque brunneo-piceis; capite antice minus producto; elytris crebre subtilius punctulatis, obsolete costatis. Long.,  $7\frac{1}{2}$  l.; lat.,  $2\frac{1}{5}$  l.

The antennæ are about half as long as the whole body; joint 1 is rather short (little more than half as long as the distance between the eyes), 2 scarcely longer, 3 slightly longer still, 4 still longer (nearly half again as long as 1). The head is triangular, scarcely longer than the width of its base, which is gently arched hindward, its length about equal to that of the basal four joints of the antennæ together. The labrum is about as long as the clypeus (the two together being less than half as long as the rest of the head), its front portion declivous, its front margin ciliated, its surface feebly and sparingly punctulate and hairy, without any furrow. The hinder part of the clypeus is flat and horizontal, with a defined margin or ridge, the portion in front being declivous; the hind suture is feebly arched, its surface obscurely punctulate (most strongly on the ridge). The hinder part of the head is punctured rather strongly in front, very obscurely behind, with a feeble central longitudinal furrow running forward for a short distance from the base. The prothorax is scarcely wider than long, its front margin about a third as wide as the base and as the hind margin of the head; its sides diverge slightly and

scarcely sinuously to about the middle, where they are feebly rounded, and whence they converge bisinuate to the front; its surface is very finely and sparsely punctured, the front portion depressed; there is an interrupted and rather feeble channel down the middle of the hinder half; the base is very gently arched hindward; scutellum smooth behind, punctured in front. The elytra are closely, evenly, and rather finely punctulate, and bear (besides the raised suture) distinct traces of three or four costæ, which almost reach the apex. The metasternum is faintly punctulate, and bears a short, close, erect pile; the ventral segments are nitid, glabrous, and almost lævigatae.

The bright red head, dark red-brown shining prothorax, and testaceous semi-opaque elytra, with their apex black, will render this species easy to recognise.

Allied to *Z. tricolor*, LeG., but (apart from colour) differing in its much shorter head, differently shaped clypeus and labrum, prothorax very much narrower in front, &c.

Port Lincoln; taken by Mr. J. Anderson.

*Z. brevicornis*, sp. nov. Rufa; antennis, palpis, mandibulis apice, femoribus anticis antice in medio, tibiis (basi exceptis), tarsis, macula in capite, maculis in prothorace 2, metasterno (episternis exceptis) et abdominis parte, piceo-nigris; elytris cœruleis, crebre subtilius (postice crassius) punctulatis; capite antice minus producto; prothorace antice minus angustato. Long., 5 l.; lat,  $1\frac{1}{2}$  l.

The antennæ are about half as long as the whole body; joint 1 is short (scarcely as long as half the distance from eye to eye); 2, shorter still; 3 and 4 subequal, each of them equal to the basal joint. The head is not very triangular in shape, its length and breadth about equal, its length a little greater than that of the basal four antennal joints together. The labrum is scarcely so long as the clypeus (the two together not quite half as long as the rest of the head), its surface devoid of a dorsal furrow, strongly punctulate, its front ciliated. The clypeus is strongly punctulate, its hind suture strongly arched. The surface of the hind part of the head is punctulate strongly in front, and gradually less strongly hindward, and bears between the eyes a large piceous blotch, which is slightly protuberant and lævigata in the middle; the hind margin of the head is almost truncate. The prothorax is very slightly shorter than the head, very slightly wider than long, and equal in width to the hind margin of the head; its front margin (which is emarginate) is nearly half as wide as its base; its sides are gently and somewhat evenly arched, their greatest divergence being in front of the middle; its surface is strongly and very sparingly punctured, with some feeble indica-

tion of a dorsal channel a little in front of the base, and with a distinct round piceous discal blotch on either side a little in front of the middle. The elytra are closely subrugosely and rather finely punctured, the punctures much mixed up with a system of reticular wrinkling. The upper surface (saving some hairs on the labrum) is glabrous. The underside is distinctly, though rather lightly and squamosely, punctured; the metasternum bears a short erect closely-set pile. The claws are red. The middle tibiae are strongly, almost angularly, bent (perhaps in the male only). The hind body is piceous, but bears a yellow patch (successively larger on each segment from the base) on either side of each segment. In the male the ventral segments are carinate all down the middle.

This species should fall, I think, into M. Fairemaire's first division of the genus, and will be the only species therein yet described having unicolorous blue elytra; its short thick antennae also will distinguish it. A very old and faded example in the South Australian Museum seems to be identical, although the black spots on the head and prothorax are wanting.

Port Lincoln.

*Z. cyanipennis*, Pasc. The description of this species occupies four lines in the "Journal of Entomology." True, it is accompanied by an uncoloured figure, but, unfortunately, the figure appears to have been taken from a specimen with its head tucked down among the sterna, and gives little information beyond what the brief description furnishes; indeed, it rather presents a contradiction, for whereas the size given after the description is 6 l., the indicator in the plate gives  $4\frac{3}{4}$  l., M. Fairemaire has provided a fuller description of an insect in his collection which he alleges (without specifying his authority) to be *cyanipennis*, Pasc., and gives its length as  $8\frac{1}{2}$  mm., which means, I suppose,  $4\frac{1}{4}$  l. I think M. Fairemaire's identification is possibly incorrect, both because he describes the colour (which appears to me remarkably constant in the metallic Zonites) differently from Mr. Pascoe, calling the elytra "blue-green" instead of "dark indigo-blue;" and because he says that the humeral calli are almost levigate, which (if my identification of *Z. cyanipennis* is correct) certainly is not the case. Mr. Pascoe makes no allusion to the puncturation of any part of *cyanipennis*, so this important character gives no assistance. I have before me two specimens from Melbourne (the locality of the original type) coloured as *cyanipennis* is said to be, except in having the mesothoracic epimera yellow (of the length 6 l.). One of these—a female—agrees with Mr. Pascoe's figure in the shape of the elytra at the apex. The other (length, 4 l.) is a male, and seems perfectly identical with the larger specimen, except in respect of what appear to be sexual characters, viz.,



the antennæ are more slender (three-fifths the length of the whole body); the elytra are more narrowed, and are separately rounded at the apex, and the ventral segments are different, the basal three being compressed into a keel down the middle, and the fourth triangularly depressed in the middle.

The head in the insect which I take to be *cyanipennis*, Pasc., is nearly twice as long as its width across the base; the labrum is quite as long as wide, is depressed down the middle, and bears a few strong setiferous punctures. I do not find any distinct separation between the hinder part of the head and anything that can be called a clypeus. The middle of a straight line drawn from the front of the labrum to the hind margin of the head would fall decidedly in front of the base of the antennæ. The antennæ are broken in the female example before me; joint 1 is unusually long (equal to the basal joint of the front tarsi, and much more than half as long as the distance from eye to eye); 2, half as long as 1; 3 and 4 successively increasing in length; but even 4 distinctly shorter than 1. The prothorax is scarcely longer than the head, is a little (to the eye it looks a good deal) longer than its greatest width, and is at its front margin rather more than a third the width of its base. The elytra are scarcely punctulate, but appear shagreened with fine vermiculate rugulosity somewhat as in *Z. rustica*.

*Z. rustica*, sp. nov. Rufa; antennis, palpis, mandibulis, femoribus apice, tibiis, tarsis, capite toto, metasterno (episternis exceptis), et abdominis segmentis primis 3, nigris; elytris cœruleis, crebre subtilius punctulatis, capite antice producto gradatim angustato; prothorace fortius crebrius punctulato, antice sat fortiter angustato. Long.,  $4\frac{1}{2}$  l.; lat.,  $1\frac{2}{3}$  l.

The antennæ scarcely exceed the length of half the body; joint 1 is short (less than half as long as the distance from eye to eye), 2 scarcely half as long as 1, 3 slightly shorter than 1, 4 slightly shorter than 3. The head is very slightly longer than its width across the eyes, with its hind margin convex hindward; it is gradually narrowed forward so as to be rather pointed in front, its width across the base of the mandibles is little less than half its width across the eyes; its whole surface, including the labrum, is evenly, strongly, and rather closely punctulate, except that the puncturation becomes finer and feebler near the hind margin; the labrum is rather strongly transverse, is clothed with long hairs, and bears a deep central fovea, much abbreviated in front. The prothorax is of the same length as the head, slightly longer than its greatest width, its front margin about half as wide as its base, its sides somewhat evenly rounded (scarcely perceptibly sinuate both in front of,

and behind, the middle), its greatest width (which is at the middle) scarcely exceeding the width of the head across the eyes, its surface evenly, somewhat strongly, and rather closely punctulate, with obscure traces of the middle part of a longitudinal dorsal furrow. The elytra on close examination are seen to be finely punctulate, but their readily noticeable sculpture consists of a confused system of wrinkling, making them appear finely shagreened, or coarsely coriaceous. To specify the degree of this sculpture by comparison with a familiar species, I may say that the general effect of the sculpture is a little less rough and strong than that on the elytra of *Z. bicolor*, Le G. The upper surface is glabrous or nearly so, the underside and legs densely clothed with short hairs. The claws are red, the ventral segments are coarsely, squamosely, and rather closely punctulate.

South Australia.

*Z. Murrayi*, sp. nov. ♂ Rufo-testacea; labro, palpis, antennis (basi picescenti excepta), femorum apice, tibiis, tarsis, metasterno (episternis exceptis), et abdominis segmentis basalibus 5 (5i apice rufo excepto), nigris; elytris læte cœruleis; capite nonnullis exemplis antice infuscato; hoc fortiter minus crebre punctulato antice minus producto minus angustato; prothorace canaliculato vix perspicue punctulato, antice sat fortiter angustato; elytris minus subtiliter vermiculato-punctulatis. Long., 5 l.; lat., 1 $\frac{2}{3}$  l.

The antennæ are about three fifths of the length of the whole body; joint 1 is piriform and strongly curved, in some examples testaceous, decidedly shorter than in *Z. cyanipennis*, scarcely longer than half the distance between the eyes, about as long as in *Z. rustica*, but much more strongly curved, joint 2 about one-third shorter, 3 equal to 1, 4 scarcely so long as 3. The head from the front of the labrum to the base is scarcely longer than its greatest width, the front part nearly parallel-sided; the middle of a line joining the front of the labrum, and the base of the head would fall between the insertions of the antennæ; the labrum is transverse and sulcate down the middle; the clypeal suture is quite undefined. The prothorax scarcely differs from that of *Z. cyanipennis*. The sculpture of the elytra is on the same plan as in *Z. cyanipennis* and *Z. rustica*, but is stronger, coarser, and less close than in either of them. The specimens before me appear to be all males, but (as usual in this genus) the soft hind body has become so much distorted in drying that its shape is not the same in any two. The first four or five ventral segments are compressed into a keel, which, however, does not always run down the exact middle line; the fifth is very feebly concave all across at the apex. The

ventral segments are very nitid, strongly and sparsely punctulate, and only thinly pubescent. The middle tibiæ are very strongly compressed and strongly curved; much more so than in *Z. cyanipennis*. The head is quite four-fifths as wide as the widest part of the prothorax.

Evidently must stand near to *Z. cyanipennis*, from which it differs in the yellow head nearly as wide as the prothorax, more coarsely sculptured elytra, much more nitid, strongly punctulate, and less pubescent ventral segments, &c.

Murray Bridge (South Australia); taken by Mr. Tepper.

*Z. gloriosa*, sp. nov. Piceo-brunnea obscure rufescens, elytris antice viridibus postice purpureo-violaceis; capite antice valde producto subtilius crebrius (disco lævi excepto) punctulato; prothorace vix perspicue canaliculato, leviter nec crebre vix subtiliter punctulato, antice rotundato-angustato; elytris subtiliter sat crebre nec rugulose punctulato. Long., 7 l.; lat., 3 l. (vix).

Considerably dilated behind. The apical part of the antennæ has been broken off the example before me; joint 1 equals 3, and is rather longer than 2 and shorter than 4. The head is more than one-third again as long as at the base it is wide, the front part parallel-sided; the middle of a line joining the base of the head and front of the labrum would fall considerably in front of the antennæ; the labrum is nearly as long as wide, its surface punctulate and longitudinally sulcate. The prothorax is slightly wider than long; its base is truncate, from which the sides diverge very slightly in nearly straight lines to immediately in front of the middle, where they are rounded, and whence they converge in a strong curve to the front, which is about half as wide as the base, but viewed from above the sides seem to pass into the front in a continuous curve; the surface bears no inequalities, except a barely discernible longitudinal furrow, which is abbreviated slightly in front. The puncturation of the elytra is considerably finer and less close than in *Z. tricolor*, Le Guill., and is not at all rugulose. The prothorax is slightly wider than the head, and scarcely half as wide as the widest part of the elytra. An obscure costa runs obliquely from close within the shoulder to the middle of the disc of the elytra.

Seems to resemble *Z. splendida*, Fairm., but that species is said to have a short triangular head, and the prothorax lævigata. The present species has the head exceptionally elongate—the anterior part being almost absolutely parallel-sided—and the prothorax distinctly punctured. It appears to me structurally nearer to *Z. cyanipennis*, Pasc., than to any other previously described species.

Port Lincoln district; taken by Mr. J. Anderson.

## COCCINELLIDÆ.

## NOVIUS.

*N. ruber*, sp. nov. Breviter ovalis; sat nitidus; pubescens; sanguineo-ruber, subtus distincte, supra vix perspicue, hic illic infuscatus; tarsi picescentibus; capite prothoraceque vix perspicue, elytris crebre subtilius, punctulatis. Long.,  $1\frac{1}{2}$  l.; lat.,  $1\frac{1}{5}$  l.

Much like *N. bellus*, Blackb., in form and sculpture, but decidedly larger, and very differently coloured. The whole upper surface is of a shining bright-red colour, almost like sealing-wax. On close inspection a little vague infuscation can be discerned running down the side of each elytron a little within the margin in the front half, and occupying the neighbourhood of the inner apical angle.

*N. cardinalis*, Muls., is a still larger species with the head black and the prothorax and elytra bearing conspicuous black markings. *N. sanguinolentus*, Muls., has the head, prothorax, and scutellum black. The upper surface of *N. Lindi*, Blackb., is entirely black, except a large red spot on each elytron. *N. cardinalis*, Muls., and *bellus*, Blackb., agree in having both prothorax and elytra red, with black markings; but the pattern of either is very different from that of the other.

Sent to me by Mr. T. G. Sloane; taken by him, I believe, at Mulwala, N.S.W.

## ERRATUM.

Tr. Roy. Soc., 1887, p. 224, lines 7, 24, 28, 29, and 33, for "*Lindi*" read "*Sharpi*."